

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

These amendments introduce no new matter and support for the amendment is replete throughout the specification and claims as originally filed. These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter, or agreement with any objection or rejection of record.

Listing of Claims:

Claims 1-86 (Cancelled).

Claim 87 (Currently amended). A method of preparing a fuel cell element, said method comprising:

providing a plurality of fibers and/or a porous electrode material;

depositing a nanoparticle catalyst on said plurality of fibers and/or porous electrode material, ~~wherein said depositing a nanoparticle catalyst comprises depositing said catalyst on said fibers by chemical vapor deposition (CVD);~~

forming nanoparticles on said plurality of fibers and/or porous electrode material using said nanoparticles catalyst;

forming a catalytically active layer comprising a substantially continuous thin film on said nanoparticles thereby forming a fuel cell element comprising a plurality of fibers bearing nanoparticles partially or fully coated with a catalytically active thin film;

wherein said thin film comprises an alloy having the formula:



wherein:

x is greater than 0.06 and less than 1;

y, z, and w are independently greater than zero and less than 1; and

x + y + z + w = 1.

Claim 88 (Original). The method of claim 87, wherein said plurality of fibers comprises a plurality of carbon fibers.

Claim 89 (Original). The method of claim 88, wherein said plurality of carbon fibers comprise a porous electrode.

Claim 90 (Original). The method of claim 88 wherein said plurality of fibers comprise a carbon fiber paper.

Claim 91 (Original). The method of claim 87, wherein said nanoparticle catalyst is a carbon nanotube catalyst and said nanoparticles are carbon nanotubes.

Claim 92 (Currently amended). The method of claim 91, wherein said nanoparticles are formed by chemical vapor deposition (CVD) or said depositing a nanoparticle catalyst comprises depositing said catalyst on said fibers by chemical vapor deposition (CVD).

Claim 93 (Cancelled).

Claim 94 (Cancelled). The method of claim 91, wherein said catalyst is a catalyst selected from the group consisting of $\text{Co}_{1-x}\text{Mo}_x$ where $0 \leq x \leq 0.3$, $\text{Co}_{1-x-y}\text{Ni}_x\text{Mo}_y$ where $0.1 \leq x \leq 0.7$ and $0 \leq y \leq 0.3$, $\text{Co}_{1-x-y-z}\text{Ni}_x\text{V}_y\text{Cr}_z$ where $0 \leq x \leq 0.7$ and $0 \leq y \leq 0.2$, $0 \leq z \leq 0.2$, $\text{Ni}_{1-x-y}\text{Mo}_x\text{Al}_y$ where $0 \leq x \leq 0.2$ and $0 \leq y \leq 0.2$, and $\text{Co}_{1-x-y}\text{Ni}_x\text{Al}_y$ where $0 \leq x \leq 0.7$ and $0 \leq y \leq 0.2$.

Claim 95 (Cancelled). The method of claim 91, wherein said catalyst is a catalyst selected from the group consisting of $\text{Co}_{8.8}\text{Mo}_{1.2}$, $\text{Co}_{2.2}\text{Ni}_{5.6}\text{Mo}_{2.2}$, $\text{Co}_{5.7}\text{Ni}_{2.1}\text{V}_{1.1}\text{Cr}_{1.1}$, $\text{Ni}_{8.0}\text{Mo}_{1.0}\text{Al}_{1.0}$, and $\text{Co}_{6.4}\text{Ni}_{2.4}\text{Al}_{1.2}$.

Claim 96 (Previously presented). The method of claim 91, wherein said nanotubes have a length less than 50 μm and a width less than 100 nm.

Claim 97 (Previously presented). The method of claim 91, wherein said nanotubes have a diameter of 50 nm to 100 nm.

Claim 98 (Cancelled). The method of claim 91, wherein said nanoparticles are coated with a substantially continuous thin film comprising platinum or a platinum alloy.

Claim 99 (Currently amended). The method of claim ~~87~~**98**, wherein said thin film partially covers the nanoparticles.

Claim 100 (Currently amended). The method of claim 8798, wherein the nanoparticles are fully coated with said thin film.

Claim 101 (Currently amended). The method of claim 8798, wherein said thin film ranges in thickness from 1 to 1000 angstroms.

Claim 102 (Previously presented). The method of claim **100**, wherein said thin film ranges in thickness from 5 to 500 angstroms.

Claim 103 (Previously presented). The method of claim **100**, wherein said thin film ranges in thickness from 5 to 100 angstroms.

Claim 104 (Cancelled). The method of claim **103**, wherein said thin film comprises an alloy comprising platinum (Pt), vanadium (V), and one or more metals selected from the group consisting of Co, Ni, Mo, Ta, W, and Zr.

Claim 105 (Cancelled). The method of claim **104**, wherein said thin film comprises an alloy comprising platinum (Pt), vanadium (V), and one or more metals selected from the group consisting of Co, and Ni.

Claim 106 (Currently amended). The method of claim 87104, wherein platinum comprises from 6% up to 50% (mole ratio or atomic percentage) of said alloy.

Claim 107 (Previously presented). The method of claim **106**, wherein platinum comprises up to 12% (mole ratio or atomic percentage) of said alloy.

Claim 108 (Original). The method of claim **104**, wherein said alloy contains platinum, vanadium, nickel, and copper.

Claim 109 (Cancelled). The method of claim **104**, wherein said thin film comprises an alloy having the formula:



wherein:

x is greater than 0.06 and less than 1;

y, z, and w are independently greater than zero and less than 1;

$x + y + z + w = 1$.

Claim 110 (Currently amended). The method of claim ~~87~~109, wherein x is 0.12.

Claim 111 (Currently amended). The method of claim ~~87~~109, wherein x is 0.12, y is 0.07, z is 0.56, and w is 0.25.

Claim 112 (Original). The method of claim 87, wherein:

said providing a plurality of fibers and/or a porous electrode material comprises providing a carbon fiber paper;

said depositing a nanoparticle catalyst comprises depositing said catalyst by chemical vapor deposition;

said forming nanoparticles comprises forming carbon nanotubes; and

said forming a catalytically active layer comprising depositing a substantially continuous thin film comprising platinum or a platinum alloy.

Claims 113-119 (Cancelled).